Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (currently amended) A method of storing and ordering image data in a database comprising:

gathering a plurality of images for inclusion in the database;

computing, by a Fourier-Mellin Transform (FMT), a match descriptor indicative of each of the plurality of images, each of the match descriptors corresponding to a multidimensional space having more than two dimensions; and

organizing the match descriptors in the database, the organizing being performed according to a predetermined metric indicative of a correspondence between a given match descriptor and the other match descriptors in the database, wherein the predetermined metric defines a similarity between two different match descriptors such that the similarity is a ratio of a number of elements common to two sets of match descriptors and a total number of unique elements in the two sets of match descriptors.

2. (original) The method of claim 1 wherein a match descriptor is a vector quantity.

3. (canceled)

4. (original) The method of claim 1 wherein the predetermined metric is a distance metric.

5. (original) The method of claim 4 wherein the distance metric is derived from a similarity metric, the similarity metric operable to determine match descriptors near to other match descriptors based on a distance in the multidimensional space.

6. (canceled).

7. (previously presented) The method of claim 1 further comprising vector quantization

of the FMT.

8. (original) The method of claim 1 wherein the match descriptors are invariant descriptors.

9. (original) The method of claim 8 wherein the invariant descriptors are insensitive to geometric translations.

10. (original) The method of claim 1 wherein the organizing according to a predetermined metric further comprises Locality-Sensitive Hashing (LSH).

11. – 17. (canceled)

18. (currently amended) A method for storing and retrieving image data comprising:

providing a plurality of match images;

computing, by a Fourier-Mellin Transform (FMT), a match descriptor corresponding to a multidimensional space indicative of each of the match images;

organizing each of the match descriptors in a database according to a predetermined similarity metric, the similarity metric operable to indicate match descriptors that are near to other match descriptors in the multidimensional space;

receiving a target image for which a match is sought;

computing a target descriptor indicative of the target image;

mapping into the database to determine a close match of the target descriptor among the organized match descriptors, a close match determined by a distance to a near match descriptor within a predetermined threshold, the mapping further comprising:

selecting a candidate match descriptor from among the organized match descriptors; and

returning the candidate match descriptor if the candidate match descriptor is a match to the target descriptor, the match being determined by a similarity metric, wherein the predetermined similarity metric defines a ratio of (i) a number of descriptors common to the target and candidate match descriptors and (ii) a total number of descriptors unique

to the target and candidate match descriptors. ~~elements common to two sets and a total number of unique elements in the two sets.~~

19. (original) The method of claim 18 further comprising selecting another candidate match descriptor if the candidate match descriptor is not a match to the target descriptor, the selecting occurring from among match descriptors organized near the candidate match descriptors.

20. (original) The method of claim 18 wherein near match descriptors are similar vectors in the multidimensional space.

21. (original) The method of claim 18 wherein the similarity metric is a set similarity metric.

22. – 35. (canceled)

36. (previously presented) The method of claim 1 wherein the predetermined metric is a distance metric that is derived from a similarity metric, the similarity metric defines a similarity between match descriptors that define images in terms of exclusion of attributes.

37. (canceled).

38. (currently amended) The method of claim 1 wherein given two different descriptors A and B with a distance D between two images, ~~the~~ similarity between A and B is a set intersection metric of ~~is~~ $D(A,B) = |A \cap B| \div |A \cup B|$.

39. (previously presented) The method of claim 18 wherein the multidimensional space has more than two dimensions.

40. (previously presented) The method of claim 18 wherein the similarity metric defines a similarity between match descriptors and the target descriptor that defines images in terms of exclusion of attributes.

41. (canceled).

42. (currently amended) A method of software execution for storing and ordering image data, comprising:

dividing each image of plural images into plural regions;

computing, by a Fourier-Mellin Transform (FMT) for each region, a descriptor that correspond to multidimensional space having more than two dimensions; and

organizing the descriptors in the database by applying a similarity metric to measure a difference between two images, wherein the difference between two different sets of descriptors is a ratio of a number of elements common to the two sets and a total number of unique elements in the two sets.

43. (previously presented) The method of claim 42 further comprising:

computing, by the FMT, a target descriptor for a target image;

using the similarity metric to determine similarity between the target descriptor and at least one candidate descriptor from the descriptors.

44. (new) The method of claim 18 wherein given two different descriptors A and B with a distance D between two images, similarity between A and B is a set intersection metric of $D(A,B) = |A \cap B| \div |A \cup B|$.

45. (new) The method of claim 42 wherein given two different descriptors A and B with a distance D between two images, similarity between A and B is a set intersection metric of $D(A,B) = |A \cap B| \div |A \cup B|$.